

REMARKS

The specification has been amended to correct the deposit date for some of the exemplary embodiments of the invention. Claims 1, 5, 8, 9, 13, 17-20, 25, 29, and 32 have been amended to correct typographical errors and to present the claims in better form for examination. New claim 37 has been added to more particularly claim the embodiment of the invention wherein a plant transformed with a nucleotide construct of the invention expresses a polypeptide that is pesticidal for various Coleopteran pests. No new matter has been added by amendment. Support for the amendments can be found throughout the specification and original claims, particularly on pages 54 and 58-60. The Examiner is requested to enter the amendments prior to examination.

It is not believed that extensions of time or fees for net addition of claims are required, beyond those that may otherwise be provided for in documents accompanying this paper. However, in the event that additional extensions of time are necessary to allow consideration of this paper, such extensions are hereby petitioned under 37 CFR § 1.136(a), and any fee required therefore (including fees for net addition of claims) is hereby authorized to be charged to Deposit Account No. 16-0605.

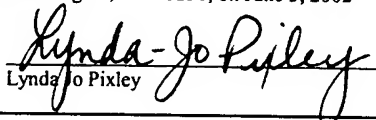
Respectfully submitted,



Leigh W. Thorne  
Registration No. 47,992

**CUSTOMER NO. 00826**  
**ALSTON & BIRD LLP**  
Bank of America Plaza  
101 South Tryon Street, Suite 4000  
Charlotte, NC 28280-4000  
Tel Raleigh Office (919) 862-2200  
Fax Raleigh Office (919) 862-2260

In re: Abad *et al.*  
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<p><b>"Express Mail" Mailing Label Number</b> Date of Deposit: June 3, 2002</p> <p>I hereby certify that this paper or fee is being deposited with the United States Postal Service "Express Mail Post Office to Addressee" service under 37 CFR 1.10 on the date indicated above and is addressed to Box Patent Application, Commissioner for Patents, Washington, DC 20231.</p> <p>_____</p>	<p><b>CERTIFICATE OF MAILING</b></p> <p>I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Commissioner for Patents, Washington, DC 20231, on June 3, 2002</p> <p> Lynda Jo Pixley</p>
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**Version With Markings to Show Changes Made:**

**In the specification:**

Please revise the first full paragraph beginning on line 6, page 12, to read as follows:

The present invention provides isolated nucleic acids comprising nucleotide sequences which encode the amino acid sequences set forth in SEQ ID NOS: 2, 4, 6, 8, 10, 12, 16, 18, 20, 22, 24, 30, 32, 34, 40, 42, 44, and 46. In particular embodiments, the invention provides nucleic acids comprising the nucleotide sequences set forth in SEQ ID NOS:1 (*Cry1218-1* CDS) and 3 (*Cry1218-2* CDS), the maize-optimized nucleic acid set forth in SEQ ID NO:9 (mo1218-1), and the native genomic sequences set forth in SEQ ID NO:27 (genomic *Cry1218-1*) and SEQ ID NO:28 (genomic *Cry 1218-2*). The coding sequence (CDS) for SEQ ID NO: 27 runs from base pair 731-4348. The CDS for SEQ ID NO: 28 runs from base pair 1254-4883. Plasmids comprising each of these five nucleic acids were deposited on May 5, 2000 and [November 2, 2000] October 20, 2000 with the Patent Depository of the American Type Culture Collection (ATCC), Manassas, Virginia, and assigned Patent Deposit Nos. PTA-1821 (corresponding to SEQ ID NO:1); PTA-1817 (corresponding to SEQ ID NO:3); PTA-2635 (corresponding to SEQ ID NO:9); PTA-2634 (comprising SEQ ID NO:27); and PTA-2636 (comprising SEQ ID NO:28).

**In the claims:**

Please amend the claims as follows:

1. (Once Amended) An isolated nucleic acid comprising a nucleotide sequence selected from the group consisting of:
  - (a) a nucleotide sequence set forth in SEQ ID NO:1, 3, 5, 7, 9, 15, or 17;
  - (b) a nucleotide sequence encoding the amino acid sequence set forth in SEQ ID NO:2, 4, 6, 8, 16, or 18;
  - (c) a nucleotide sequence characterized by at least 88% sequence identity to the nucleotide sequence set forth in (a);

- (d) a nucleotide sequence encoding a protein comprising an amino acid sequence characterized by at least 85% sequence identity to the amino acid sequence set forth in (b);
- (e) an antisense nucleotide sequence corresponding to [the] a nucleotide sequence of any one of (a) to (d); and
- (f) a nucleotide sequence that hybridizes under stringent conditions to [the] a nucleotide sequence of [any one of] (a) [to (e)].

5. (Once Amended) The polypeptide according to claim 4, wherein said polypeptide is characterized by pesticidal activity against at least one pest belonging to the order [Coleopteran] Coleoptera.

8. (Once Amended) The method according to claim 7, wherein said insect pest is selected from the group consisting of Colorado potato beetle, western corn rootworm, [and] southern corn rootworm, and boll weevil.

9. (Once Amended) A transformed plant comprising in its genome at least one stably incorporated nucleotide construct comprising a coding sequence operably linked to a promoter that drives expression of a polypeptide that is pesticidal for at least one pest belonging to the order [Coleopteran] Coleoptera, wherein said coding sequence is selected from the group consisting of:

- (a) a nucleotide sequence set forth in SEQ ID NO:1, 3, 5, 7, 9, 15, or 17;
- (b) a nucleotide sequence encoding the amino acid sequence set forth in SEQ ID NO:2, 4, 6, 8, 16, or 18;
- (c) a nucleotide sequence characterized by at least 88% sequence identity to the nucleotide sequence set forth in (a);
- (d) a nucleotide sequence encoding a protein comprising an amino acid sequence characterized by at least 85% sequence identity to the amino acid sequence set forth in (b);

- (e) a nucleotide sequence according to any one of (a) to (d) that comprises codons optimized for expression in a plant;
- (f) an antisense nucleotide sequence corresponding to [the] a nucleotide sequence of any one of (a) to (d); and
- (g) a nucleotide sequence that hybridizes under stringent conditions to [the] a nucleotide sequence of [any one of] (a) [to (f)].

13. (Once Amended) A transformed microorganism comprising a nucleotide sequence selected from the group consisting of:

- (a) a nucleotide sequence set forth in SEQ ID NO:1, 3, 5, 7, 9, 15, 17, 27, or 28;
- (b) a nucleotide sequence encoding the amino acid sequence set forth in SEQ ID NO:2, 4, 6, 8, 16, or 18;
- (c) a nucleotide sequence characterized by at least 88% sequence identity to the nucleotide sequence set forth in (a);
- (d) a nucleotide sequence encoding a protein comprising an amino acid sequence characterized by at least 85% sequence identity to the amino acid sequence set forth in (b);
- (e) an antisense nucleotide sequence corresponding to the nucleotide sequence of any one of (a) to (d); and
- (f) a nucleotide sequence that hybridizes under stringent conditions to the nucleotide sequence of [any one of] (a) [to (e)].

17. A method for impacting a plant pest comprising introducing into said plant or cell thereof at least one nucleotide construct comprising a coding sequence operably linked to a promoter that drives expression of a pesticidal polypeptide in plant cells, wherein said nucleotide sequence is selected from the group consisting of:

- (a) a nucleotide sequence set forth in SEQ ID NO:1, 3, 5, 7, 9, 15, or 17;

- (b) a nucleotide sequence encoding the amino acid sequence set forth in SEQ ID NO:2, 4, 6, 8, 16, or 18;
- (c) a nucleotide sequence characterized by at least 88% sequence identity to the nucleotide sequence set forth in (a);
- (d) a nucleotide sequence encoding a protein comprising an amino acid sequence characterized by at least 85% sequence identity to the amino acid sequence set forth in (b);
- (e) an antisense nucleotide sequence corresponding to the nucleotide sequence of any one of (a) to (d); and
- (f) a nucleotide sequence that hybridizes under stringent conditions to the nucleotide sequence of [any one of] (a) [to (e)].

18. (Once Amended) The method according to claim 17, wherein the plant produces a polypeptide characterized by pesticidal activity against at least one pest of the order [Coleopteran] Coleoptera.

19. (Once Amended) The method according to claim 18, wherein said plant pest is selected from the group consisting of Colorado potato beetle, western corn rootworm, [and] southern corn rootworm, and boll weevil.

20. (Once Amended) A variant of the nucleic acid set forth in SEQ ID NO:19 wherein the variant comprises a nucleotide sequence having at least one additional codon not present in the nucleotide sequence set forth in SEQ ID NO:19, wherein the at least one additional codon introduces an additional protease-sensitive site in the loop region between alpha-helices 3 and 4 of domain 1 of the encoded polypeptide, and further wherein the polypeptide encoded by the variant is characterized by improved pesticidal activity against a pest belonging to the order [Coleopteran] Coleoptera relative to the activity of the polypeptide set forth in SEQ ID NO:2 .

25. (Once Amended) A variant of the nucleic acid set forth in SEQ ID NO: 15, wherein the variant comprises a nucleotide sequence that includes at least one additional codon that introduces an additional protease-sensitive site in the loop region between alpha-helices 3 and 4 of domain 1 of the polypeptide encoded by the variant nucleic acid, and further wherein the encoded polypeptide is characterized by improved pesticidal activity against a pest belonging to the order [Coleopteran] Coleoptera relative to the activity of the polypeptide set forth in SEQ ID NO: 2.

29. (Once Amended) A variant of the polypeptide set forth in SEQ ID NO: 16, wherein the variant comprises an amino acid sequence that includes at least one additional amino acid residue that introduces an additional protease-sensitive site in the loop region between alpha-helices 3 and 4 of domain 1 of the polypeptide, and further wherein the encoded polypeptide is characterized by improved pesticidal activity against a pest belonging to the order [Coleopteran] Coleoptera relative to the activity of the polypeptide set forth in SEQ ID NO:2.

32. (Once Amended) The transformed plant according to claim 31, wherein cells of the transformed plant express a polypeptide that is pesticidal for at least one pest belonging to the order [Coleopteran] Coleoptera.

Please add the following new claim:

37. The transformed plant according to claim 32, wherein cells of the transformed plant express a polypeptide that is pesticidal for at least one pest selected from the group consisting of Colorado potato beetle, western corn rootworm, southern corn rootworm, and boll weevil.